

West Hants Regional Municipality

GHG Emission Local

Action Plan

Report created for Milestone 3 of the
Partners for Climate Change Protection
(PCP) Program



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Executive Summary

West Hants Regional Municipality has prepared a local action plan which outlines actions to reduce greenhouse gas emissions as part of Milestone 3 of the Partners for Climate Protection program. This action plan details the steps the Municipality has taken so far as part of the PCP program, the stakeholder engagement strategies that helped shape the plan, those responsible for carrying out the actions to reach the emissions reduction goals, and finally the costs and potential funding sources to offset associated costs of implementation. Implementation of this local action plan will ensure the Municipality reaches the goal of 45% reduction in both community and corporate emissions by 2030.

Glossary

BAU: Business-as-usual

CAO: Chief Administrative Officer

EV: Electric Vehicle

FCM: Federation of Canadian Municipalities

GHG: Greenhouse gas

ICLEI: Local Governments for Sustainability

NRCan: Natural Resources Canada

NS: Nova Scotia

NSPI: Nova Scotia Power Incorporated

PACE: Property Assessed Clean Energy

PCP: Partners for Climate Protection

tCO₂e: tonnes CO₂ equivalent. A unit to represent the three principal greenhouse gases that were measured – carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) – each standardized by their Global Warming Potential and expressed in units of tCO₂e.

WHRM and the Municipality: West Hants Regional Municipality

Background

West Hants Regional Municipality is situated about 45 minutes outside of Halifax along Highway 101, with an estimated population of 19,000 residents. The majority of the Municipality is comprised of lower density, rural communities. However, there are certain areas such as Hantsport and Windsor where denser development and services are concentrated.

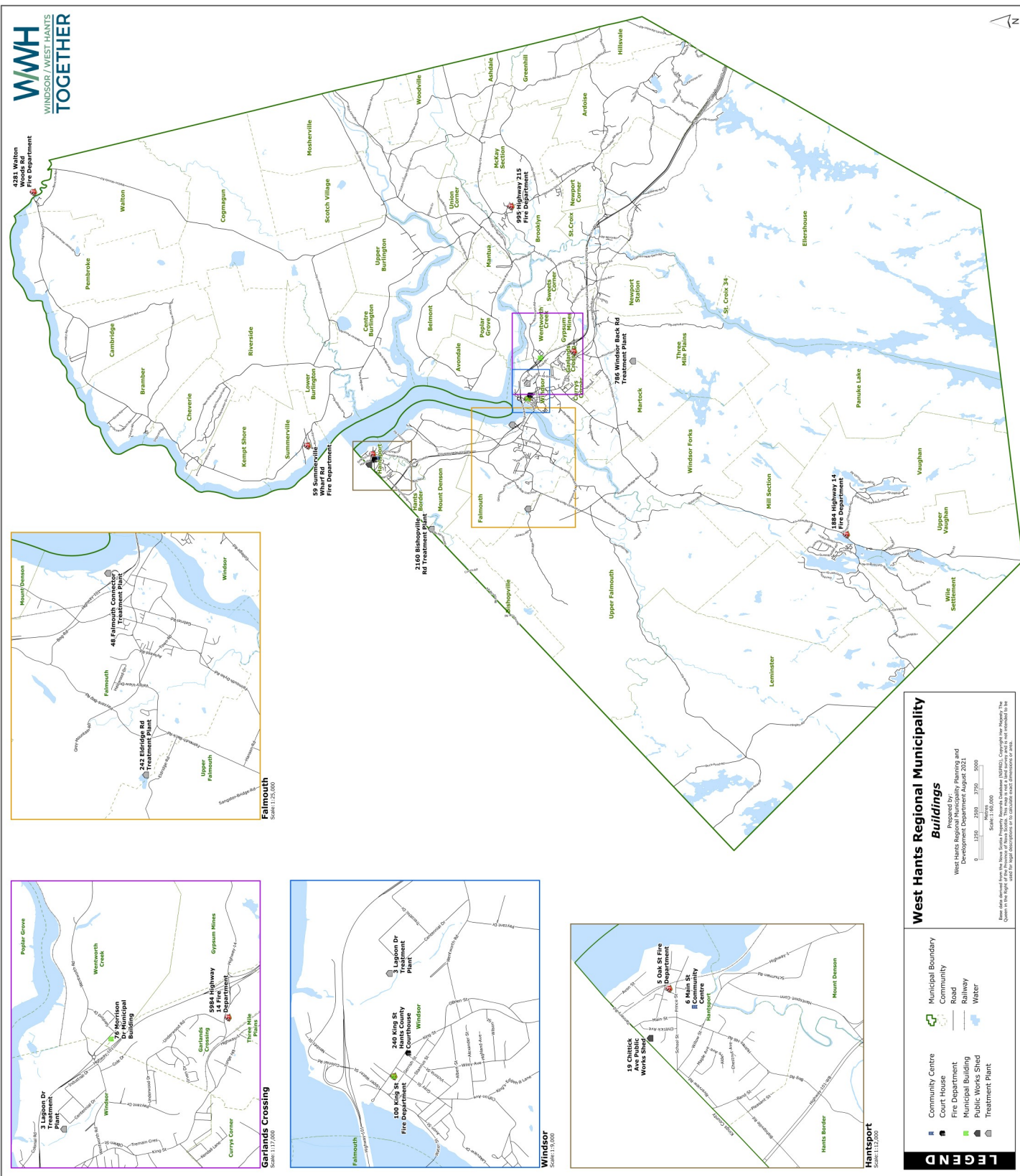
As stated in the Municipal Climate Change Action Plan (2013), the hazards that pose the biggest threat to WHRM are coastal flooding, inland flooding and drought which are all exacerbated by climate change. The benefits of implementing climate mitigation and adaptation measures outweigh the costs by 6:1. This means that the cost to invest in these mitigation and adaptation measures costs six (6) times less than fixing the damage to infrastructure that is later caused by climate change.¹ Not only does it save money and infrastructure in the long run, but mitigation also protects lives, improves safety, and decreases disruption of daily life.² Nova Scotia has set the most ambitious climate change goals in the country by aiming to reduce GHG emissions by 53% below 2005 levels by 2030 and aiming to achieve net-zero emissions in Nova Scotia by 2050.³

¹ Insurance Bureau of Canada, 2021. The Cost of Climate Adaptation. <http://www.abc.ca/nu/disaster/water/flooding-in-canada/the-cost-of-climate-adaptation>

² National Institute of Building Sciences, 2019. Natural Hazard Mitigation Saves: 2019 Report. <https://www.nibs.org/projects/natural-hazard-mitigation-saves-2019-report>

³ Climate Change Nova Scotia, 2019. What Nova Scotia is Doing. <https://climatechange.novascotia.ca/what-ns-is-doing>

Figure 1 Map of WHRM and the location of Municipal buildings



PCP Program

The PCP program is administered by FCM and ICLEI which guides municipalities through a five-step milestone framework to reduce their GHG emissions. Milestone 1 requires municipalities to create a baseline emissions inventory as well as a forecast to predict the BAU scenario in the future. In Milestone 2, emissions reductions targets are set and in Milestone 3, a local action plan is created. Milestone 4 works through implementation of the local action plan, and Milestone 5 is comprised of monitoring progress and reporting results. PCP requires five main activity sectors to be tracked for the corporate inventory, as well as the community inventory, but additional sectors can be added. The sectors for the corporate inventory are summarized in Figure 2 and the community inventory in Figure 3.

Figure 2 WHRM's completed Milestones from the PCP program



WSP Background Study

Consulting firm WSP was hired in 2019-2020 to do a background study and suggest potential actions the Municipality could take to reduce emissions and meet the 45% targets by 2030 for Milestone 1 and 2 of the PCP program. The study included sections detailing the cost of each action, who would be responsible for implementation, a priority timeline for implementation, the anticipated impact of the action, and a categorization of a safe, balanced or dynamic scenario. The actions were reviewed and assessed, and, in conjunction with some additional actions, the majority of WSP's suggestions were incorporated into this local action plan.

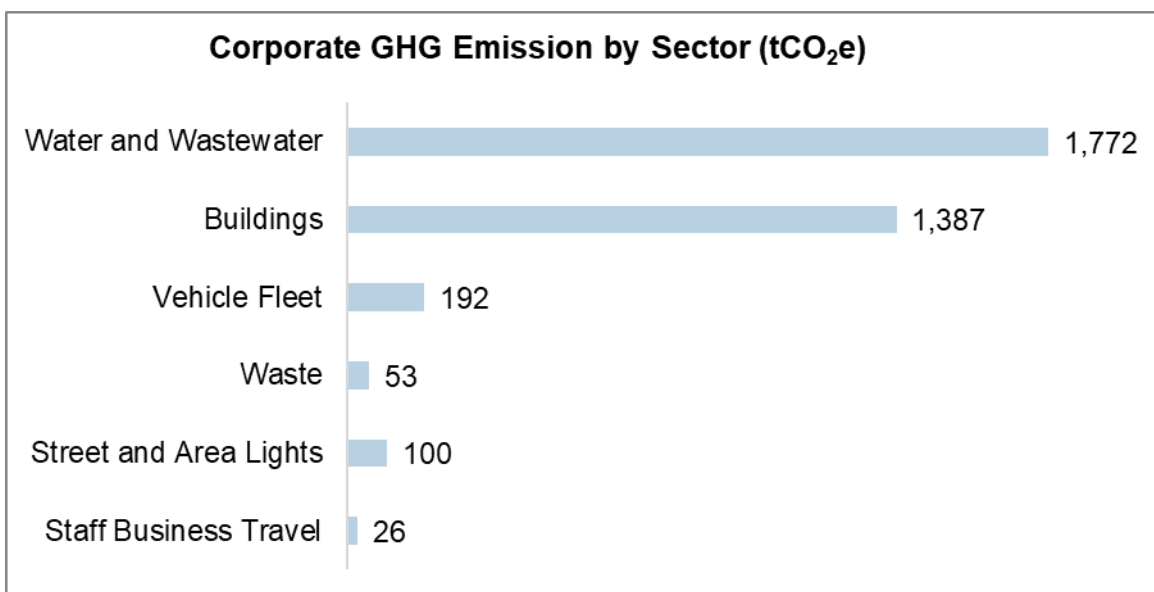
Copies of the WSP report can be requested through the Planning and Development Department.

GHG Inventory and Forecast

Milestone 1

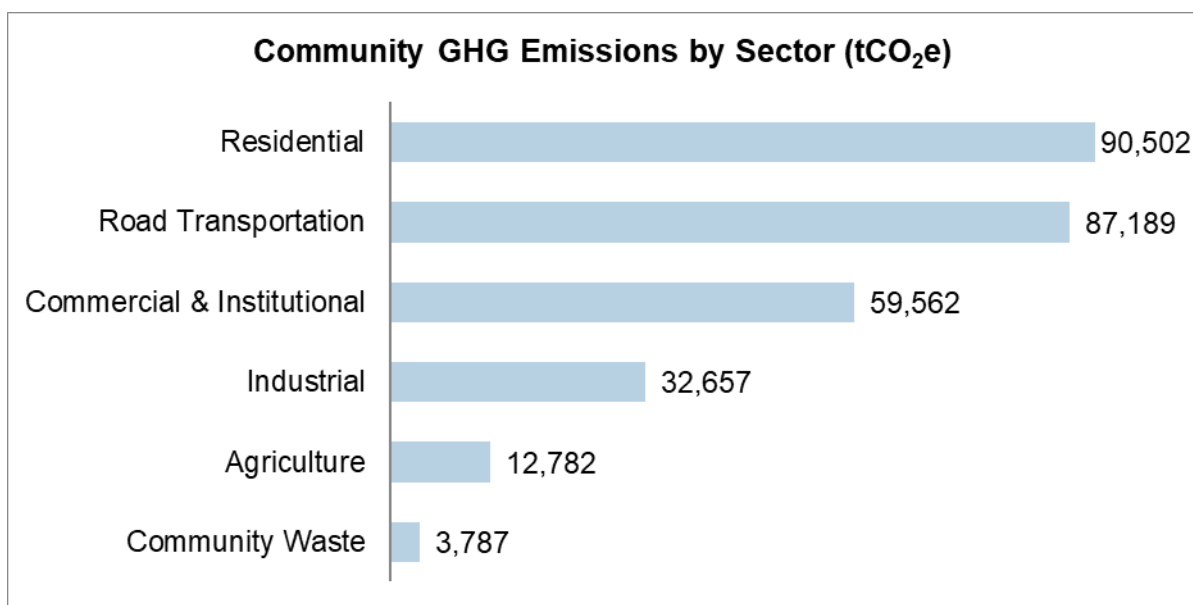
Milestone 1 involved creating a baseline emissions inventory for both corporate and community emissions, and then creating an emissions forecast for the next 10 years. This baseline will allow the Municipality to track its progress in reducing emissions. The corporate inventory uses the 2018/2019 fiscal year as the baseline year. Both the corporate and community inventories cover six different sectors of GHG emissions. The corporate inventory covers emissions resulting from municipal services, including buildings, lighting, water and wastewater, solid waste, and transportation. On top of these five main activity sectors required by the PCP program, staff business travel was also incorporated into the inventory.

Figure 3 Emissions for the corporate sector



The community inventory uses 2016 as the baseline year due to availability of data. The five main activity sectors for the community inventory are residential, commercial and institutional, industrial energy consumption, road transportation, and solid waste. Agriculture was included as an additional activity in the community sector due to its importance and relevance to the rural nature of the Municipality.

Figure 4 Emissions in the community sector



Next, an emissions forecast was created to identify the BAU emissions that can be expected by 2030. To create the forecast, research on provincial and national trends in GHG's was conducted to develop the predicted emissions for WHRM by 2030. Further details on these trends can be found in WSP's 2020 report titled Corporate and Community GHG Inventory. The basis for the BAU forecast relied heavily on the decarbonization of the Nova Scotia electrical grid. This means that as NSPI integrates more green forms of electricity generation into the power grid, the electricity dependent items used by consumers such as electric vehicles produce less carbon compared to when burning coal was the main form of fuel for electricity power generation. As of 2020, 30% of the Nova Scotia power grid is fueled by renewable energy, with plans to increase their generation to 60% by 2022.⁴ In 2017, the year between the baseline calculations of the corporate and community inventories, NSPI had only 9% of renewable energy fueling the power grid, as seen in the West Hants Background Report: Infrastructure (2018). The WSP calculations predicted a BAU forecast of a 44% reduction in corporate emissions and 41% reduction in community emissions over a 10-year period. This large reduction is due to the fact that 84.6% of corporate emissions and 48% of community emissions are currently coming from electricity use. The following assumptions were used to create the BAU forecast for WHRM:

- an emission factor reduction of 44% for electricity consumption;
- a 10% reduction in energy consumption;
- a 28% reduction in fuel rate;
- an increase of electricity used in the residential sector for charging electric vehicles;
- an increase of registered vehicles by 15%; and
- that 10% of vehicles on the road will be electric vehicles.

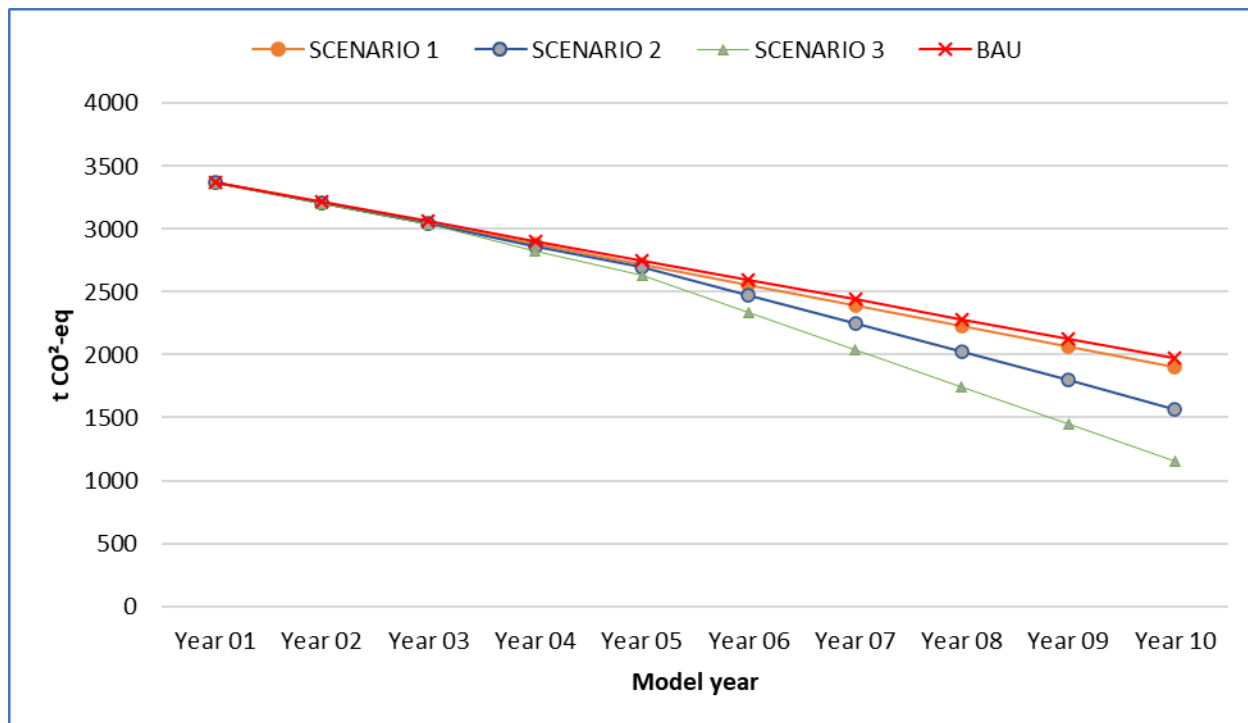
⁴ Nova Scotia Power Incorporated, 2021. Clean Energy: Powering a Green Nova Scotia, Together. <https://www.nspower.ca/cleanandgreen/renewable-energy-sources>

Milestone 2

Milestone 2 required emissions reduction targets to be set at the community and corporate level. The goal has been set at 45% emissions reductions in both the corporate and community inventory by 2030. The emissions from the corporate inventory total 3530 tCO₂e, and the community inventory had emissions of 286,480 tCO₂e.

In addition to a BAU forecast, the potential reductions scenarios were forecasted into 2030 to identify which actions should be taken. WSP's background study detailed three scenarios (safe, balanced and dynamic) that the Municipality could take to reduce emissions. To complete Milestone 3, a combination of safe and balanced scenarios was chosen. Safe scenarios are low cost, low impact actions, while balanced scenarios are medium cost medium impact, and dynamic scenarios are large cost and large impact actions. Scenario 1 describes the GHG emissions reduction that can be achieved by implementing only the safe scenario actions. Scenario 2 describes the emissions reduction that can be achieved through a combination of safe and balanced scenario actions, and scenario 3 describes the reduction that can be achieved from implementing the actions in the safe, balanced and dynamic scenarios. At this stage of the PCP program, the Municipality decided to implement scenario 2 in order to meet the 45% emissions reductions targets for the corporate and community inventory. Further details about the scenarios can be found in WSP's background study (2020) and the emissions inventory by WHRM (2020).

Figure 5 Comparison of the corporate emissions forecast for the BAU scenario against the three proposed reduction scenarios



PCP Milestone 3

Requirements

Milestone 3 requires the development of a local action plan. The action plan must outline how the Municipality will achieve the emissions reduction targets at both the community and corporate levels. To complete Milestone 3, the plan must contain a description of the activities that will help to achieve the target reductions, description of how the public or internal stakeholders participated in developing the plan, descriptions of the costs and/or funding sources, and names of the Municipal departments and/or organizations responsible for the plan and actions outlined in it.

Goals of the Action Plan

There were seven (7) goals that the Municipality decided on during Milestone 1 to achieve the reductions. These are:

1. Reduce energy consumption for municipal buildings
2. Introduce renewable energy to municipal buildings
3. Define a green fleet program
4. Invest in education for the community and staff
5. Lead by example
6. Be more electric vehicle and active transportation friendly
7. Make it easier to buy from local vendors and eat local food

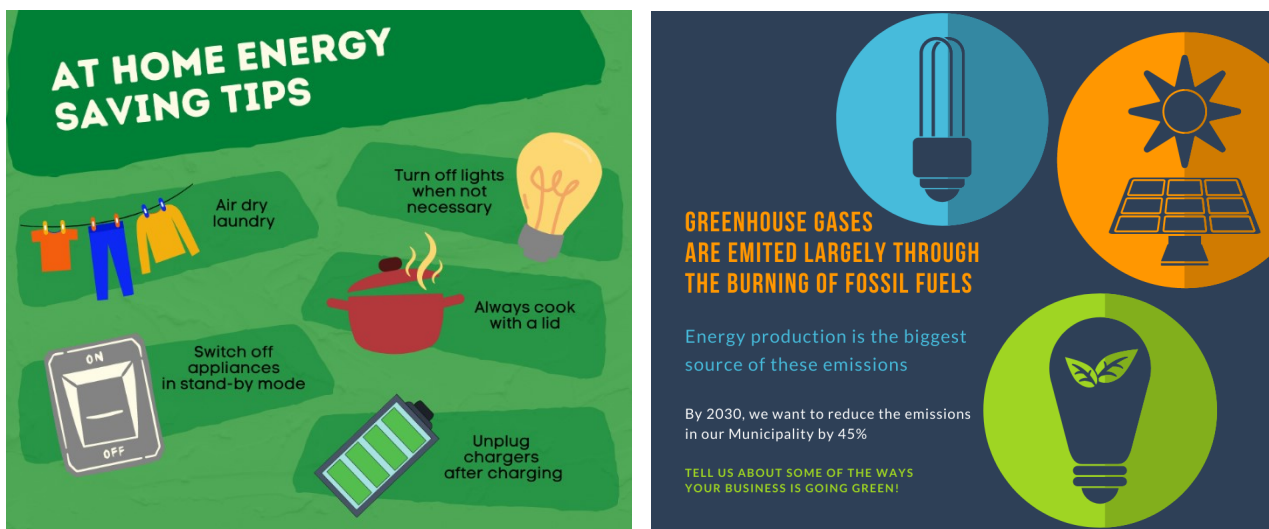
Planned and Wishlist Actions

The actions that the Municipality will take have been divided into 2 additional categories: Planned Actions and Wishlist Actions. The planned actions are those that WHRM will be required to complete in the next 10 years in order to gain the 45% reductions being proposed. The Wishlist items are additional actions that are a high-cost high-reduction actions and will require funding in order to implement them. Wishlist items are from the dynamic scenario and so the Municipality will look to incorporate some of these actions in addition to the planned items if funding is available over the next 10 years. For example, a PACE program is something that will have a significant reduction in the community sector and residents showed interest in participating in such a program through the community survey, however a PACE program is costly to set up, implement and monitor. If funding was available to allow the Municipality to start a PACE program it would be much more feasible.

Engagement

The engagement strategy began with short, informative posts on the Municipal social media accounts about GHG's as well as strategies for reducing energy consumption around the house (Figure 6). This was followed up by the launch of WHRM's Green Business Initiative through social media channels. The goal of the Green Business Initiative is to promote local businesses in WHRM that conduct sustainable practices, while also demonstrating to residents the numerous ways sustainable initiatives are already being implemented within their community. Then, to create an action plan that represented the needs of the community, both staff and the community were engaged through Municipal department meetings and a community survey to gain interest and feasibility into proposed actions for the corporate and community sectors. In the corporate sector, members of each Municipal Department were interviewed about their opinions on actions that related to their area of expertise in the Municipality. These departments included Planning and Development, Public Works, CAO's Office, Community Development and Finance. Table 1 highlights the thoughts and concerns expressed by all these departments based on the goal they fall under.

Figure 6 Public engagement posts detailing residential energy saving tips and GHG emissions



Staff

Members of each Municipal department were asked questions relating to energy efficiency as well as the planned action items that were being incorporated into the action plan. Questions were asked in relation to each department's area of expertise, and therefore not every department was asked about items in all seven goals of the action plan. These comments helped to shape the actions that were ultimately chosen for the action plan.

Table 1 Summarized comments from all WHRM Municipal departments relating to the local action plan

Action Area	Result
1. Reduce energy consumption of Municipal buildings	Consider making energy efficiency a requirement for all retrofit jobs and new builds
2. Introduce renewable energy to Municipal buildings	<ul style="list-style-type: none"> • Concerns over capital cost of renewable technologies, particularly solar panels • Flat roofs of Municipal buildings gives solar good potential • Consider hydro with the dams at the water treatment facilities • Solar streetlights could be a potential investment over time
3. Define a green fleet program	Concerns about charge time of batteries and cost to replace them, as well as efficiency of vehicles in cold weather as well as big jobs like snow clearing.
4. Invest in education for the community and staff	<ul style="list-style-type: none"> • Educate the community about actions prior to implementing them (PACE program, solar garden, etc.) • Start education early in schools
5. Lead by example	<ul style="list-style-type: none"> • Improve communication with residents • Allow home working days and flexible start times • Consider long term benefits when looking at items with high capital costs
6. Be more EV and active transportation friendly	Need more accessible infrastructure and closer communities to promote active transportation
7. Make it easier to buy from local vendors and eat local food.	The community center could be a good spot for a farmers' market

Residents

Green Business Initiative

Two engagement strategies were used to reach the residents of WHRM. The first is WHRM's Green Business Initiative, where various businesses from around the Municipality sent in the sustainable initiatives taking place in their operations to be featured on WHRM's social media sites. The purpose of this engagement strategy was to acknowledge and give visibility to the various sustainability practices taking place locally in order to demonstrate how achievable sustainability already is within the Municipality. The posts were tracked for levels of community engagement, including views, clicks, likes, shares and comments. The posts were put up on WHRM's Facebook and Twitter accounts between July 2nd and August 23rd, 2021.

THIS WEEK'S GREEN BUSINESS IS THE STATION FOOD HUB

The Station aims to have an impact on Sustainable Development Goal 12.3 that focuses on reducing food loss throughout the supply chain. They are committed to increasing the amount of local food that is grown, produced and consumed here in Nova Scotia by targeting public institutions.



Co-Founders Rebecca Tran and Heather Lunan with their upcycled product "Puree Scoops"

www.thestationfoodhub.ca

Post 1 – Facebook Engagement	
Date Posted	July 2 nd , 2021
Business Name	The Station Food Hub
People Reached	1746
Engagements	97
Likes	1
Shares	5
Comments	0

THIS WEEK'S GREEN BUSINESS IS MIKE WEBB'S AUTO WORKS

As a collection facility with UOMA NS, they accept used oil materials including aerosol containers, filters, oils, antifreeze, and their associated containers to be recycled. They also offer an eco-friendly fluid film undercoating as part of their regular services.




www.mikewebbsautoworks.com

Post 2 – Facebook Engagement	
Date Posted	July 9 th , 2021
Business Name	Mike Webb's Auto Works
People Reached	3412
Engagements	352
Likes	28
Shares	16
Comments	3

THIS WEEK'S GREEN BUSINESS IS SEQUELS FASHION BOUTIQUE

Recycling is at the core of this consignment fashion boutique. Consignors bring gently and previously loved items to us to be sold in-store. Anything that is unable to be sold or used in store is donated to local charities. Consignment shops help in reducing landfill waste while offering affordable shopping options.

Pictured are Sequels reusable bags and reloadable gift cards



FB and IG: @sequelsfashion

Post 3 – Facebook Engagement

Date Posted	July 16 th , 2021
Business Name	Sequels Fashion Boutique
People Reached	1639
Engagements	78
Likes	2
Shares	5
Comments	2

THIS WEEK'S GREEN BUSINESS IS LISA'S CAFE

The Café recycles 100% of their used fryer oil, offers compostable take-out containers and utensils, as well as paper bags, and has eliminated the use of plastic bags while increasing the use of reusable containers. Their energy efficiency stems from the use of heat pumps and LED lights, and products are bought in bulk while food waste is close to zero.



FB: @lisascafewindsorns

*Photo retrieved from Lisa's Cafe Facebook page

Post 4 – Facebook Engagement

Date Posted	August 17 th , 2021
Business Name	Lisa's Cafe
People Reached	1626
Engagements	69
Likes	33
Shares	3
Comments	1

THIS WEEK'S GREEN BUSINESS IS THE FLYING APRON INN & COOKERY

Sustainability extends from the used book store, compostable to-go containers, recycled fryer oil and automobile fuel, full circle composting for pigs, heat pumps, LED lighting, and biodegradable hand soap in all washrooms. Their motto, 'We Do Local' means purchasing from sustainable local producers, and their partnership with the Ocean Wise Conservation program puts only sustainably-caught fish on the menu.

There's also organic gardens, a solar powered greenhouse, and rain barrels used to collect water.



www.flyingaproncookery.ca

IG @flyingaproncooks

FB @flyingaproninn&cookery

Post 5 – Facebook Engagement

Date Posted	August 23 rd , 2021
Business Name	The Flying Apron Inn & Cookery
People Reached	6375
Engagements	313
Likes	22
Shares	24
Comments	0

Community Survey



The second engagement strategy used an online community survey to gain interest among residents of the Municipality regarding some of the proposed actions. It was launched on June 18th, 2021, via links on Facebook and Twitter, as well as through the community newsletter which reaches all households, Municipal offices, and sports complexes within the Municipality. For residents with unreliable or no internet access, there was an option to complete the survey over the phone. Overall, there were 139 responses from members of the community. The results are shown in Table 2. A select number of questions from the survey asked how residents felt about certain green initiatives that were being considered as part of the action plan, while the rest asked about resident's level of knowledge regarding climate change and local food.

Table 2 Results of the WHRM community survey. Percentages are from 139 total responses

Survey Question	Survey Responses	% of Responses
Q1. Prior to taking this survey, did you know the Municipality had a Municipal Climate Change Action Plan Committee?	Yes	35%
	No	65%
Q2. Do you feel informed about climate change and how it affects your community?	Very Informed	10%
	Moderately Informed	40%
	Slightly Informed	29%
	Not Informed	21%
Q3. Given what you know about climate change, do you feel it is important to take steps to reduce our impact as a Municipality?	Very Important	65%
	Moderately Important	24%
	Slightly Important	7%
	Not Important	4%
Q4. Would you participate in a renewable energy installation program, such as installing solar panels on your roof, if an affordable option were given to you?	Yes	72%
	No	8%
	Unsure	18%
	I already have solar panels	2%
Q5. Would you be interested in participating in a community solar garden?	Yes	42%
	No	19%
	Unsure	39%
Q6. Have you considered installing a heat pump to heat and cool your home?	Yes	40%
	No	12%
	Unsure	3%
	I already have a heat pump	45%
Q7. Would you use public transit if it were offered in major hubs such as Windsor?	Yes	25%
	No	51%
	Unsure	24%

Q8. Have you considered making your next car purchase an electric vehicle?	Yes	32%
	No	42%
	Unsure	21%
	I already have an electric vehicle	4%
Q9. If electric vehicle charging stations were installed around the Municipality, would you consider making your next purchase an electric vehicle?	Yes	42%
	No	24%
	Unsure	29%
	I already have an electric vehicle	4%
Q10. Given the option, and assuming they were equally accessible, would you prefer to shop at a local farmers market or a large chain grocery store (e.g. Sobeys?)	Farmer's Market	55%
	Grocery Store	5%
	Either one	40%
	Neither	1%
Q11. Do you feel informed about the benefits to the environment and economy from purchasing locally grown food and locally sourced meats?	Very Informed	38%
	Moderately Informed	44%
	Slightly Informed	14%
	Not Informed	4%

Question 12 of the survey asked for any comments that respondents had, and all comments are listed in Appendix A. Results of the survey helped to inform the actions that were being chosen for the plan, based on both the level of interest residents expressed towards some actions as well as understanding where knowledge gaps existed between the Municipality and its residents. 65% of respondents were unaware that the Municipality had a Municipal Climate Change Action Plan Committee, indicating that communication between the Municipality and its residents needs improvement. There was a 10% increase of residents who would consider purchasing an EV if there were charging stations placed around the Municipality, indicating that visibility of these charging stations may be beneficial to help residents who are considering this type of purchase take the leap. Offering transit in major hub areas was supported by 25% of residents, with comments expressing that transit would be useful for work travel and generally nice to have available.

“Planning strategy must reflect a decrease in dependence on automobiles. Subdivisions being built with no sidewalks or connectivity to surrounding areas only encourage more automobile use”

- Survey Response

Other benefits to transit include a low-cost option for travel around major hubs and a reduced dependency on everyday individual vehicle travel. It is important to note that while only a quarter of respondents said with certainty they would use transit, the rural nature of the Municipality means transit would likely only be taken up by the percentage of residents that live in or near these major hubs. Increasing the connectivity of communities and active transportation options to move between them could also have a positive impact on transit uptake, with multiple comments from the survey stressing the importance of creating communities with infrastructure that promoted active transportation rather than reliance on vehicles. Finally, 55% of respondents would prefer to shop at a farmers’ market, compared to only 5% preferring to shop at a grocery store, and survey comments express interest in hosting a more permanent, indoor space for farmers markets.

“Would love to see a bigger and more consistent (inside maybe) farmer's market with a stronger emphasis on food rather than crafts and soap etc. Would love the solar "city" idea to come here and provide more green ways to heat my home”

- Survey Response

There was uncertainty in some answers, with 21% and 29% of residents in question 8 and 9 respectively unsure about making their next purchase an electric vehicle. There was further uncertainty in question 5 with 39% of residents unsure if they would like to participate in a solar garden. Education on the costs and benefits of electric vehicles and solar panels can help individuals make more informed decisions about whether they want to participate. Other results, like a high interest in PACE programs, demonstrates that the Municipality would benefit from educating residents about their options for these types of programs.

In addition to the Green Business Initiative and community survey, the community newsletter has been added as another medium to engage and communicate with residents. A new section was added to the community newsletter to inform residents about the effects of climate change, and the steps they can take to help reduce its impact, as well as what actions the Municipality is taking to reduce emissions.

“Some of the survey questions do not apply to my current situation. I rent an apartment (I have no say RE heat pumps, solar energy) and I do not have a vehicle and I do not plan on purchasing a vehicle. If I did own my home I would go completely green if affordable options were readily available. I do really wish we had public transportation.”

- Survey Response

Planned Actions

The planned actions will follow the seven goals that were agreed upon by the Municipality. Any cost requiring staff time indicates that the responsible department will require the work time of the staff to complete the required action. The timelines for each action range between short, medium and long term. Short term actions should be completed in 1-3 years, medium term completed in 3-5 years and long term completed in 5-10 years.

Goal 1: Reduce energy consumption for Municipal buildings

Municipal buildings were found to be the second largest emissions source in WHRM, accounting for 39.3% of emissions in the corporate inventory. The majority of these emissions stem from electricity use, so energy efficiency will be a high priority under this goal. By reducing emissions from a high producing area such as Municipal buildings, there will be a greater reduction of emissions for the corporate sector as a whole.

1.1 PERFORM INTERNAL BUILDING CONDITIONS SURVEY	
Cost/Funding	Staff time
Dept. Responsible	Public Works
Timeline	Short term
Details	An expected emissions reduction of 5% for all Municipal buildings will result in an emissions reduction of 69.35 tCO ₂ e. The building surveys will be completed in-house using the NRCan checklist. The checklist will identify areas within each Municipal building where efficiency can be improved. Fixing these items will provide the 5% emissions reduction. The checklist can be found

1.2 PROMOTE AND CELEBRATE ENERGY EFFICIENT BUILDINGS	
Cost/Funding	Staff time
Dept. Responsible	CAO and Communications
Timeline	Short term
Details	The Municipality will continue to promote sustainable initiatives taken on by local businesses on the WHRM social media through the Green Business Initiative. As upgrades and actions from this plan are being implemented, they will also be highlighted on WHRM's social media in plain language that is universally understood. This platform will be used to communicate with and educate the public on energy efficiency in the area as well as ways residents can implement energy efficiency into their day-to-day lives.

1.3 OFFICE BUILDING LOCATION REVIEW

Cost/Funding	Staff time and cost of upgrades Funding can be applied for through FCM's Buildings Funding
Dept. Responsible	Municipal Council and Staff
Timeline	Short term
Details	While discussions continue about remaining at 76 Morison Dr. or moving to 100 King St., the Municipal office will require some energy efficiency upgrades. These upgrades should consider items from the Natural Resources Canada Checklist, as well as needs of future infrastructure such as electrical wiring for electric vehicle charging stations and solar panels. Some upgrades to consider are installing heat pumps, using sensor lights, window insulation and replacement, cool roofs, smart thermostats, and replacing old appliances with more efficient ones.

Goal 2: Introduce renewable energy to Municipal buildings

Renewable energy can offset high energy use at peak times of the day and reduces fossil fuel consumption. While some technologies such as heat pumps use electricity to run, implementing the switch now allows the infrastructure to be in place and ready for when NSPI decarbonizes the grid. Other renewable energy technologies such as solar panels and wind farms are excellent ways to produce clean energy as this decarbonization continues.

2.1 FUEL-SWITCHING – HEAT PUMPS

Cost/Funding	\$310,000 Funding available through FCM's Buildings Funding
Dept. Responsible	Public Works
Timeline	Medium term
Details	The goal is to implement the switch for the Hants County Courthouse (240 King St.), Hantsport Fire Department (5 Oak St.), and the Public Works Shed (19 Chittick Ave.), resulting in an initial reduction of 16 tCO ₂ e or 1.1% of buildings emissions in the first year. Thermal exchange is used to replace fossil fuel consumption through using electric-powered air, ground, or water-sourced heat pumps at each building. Heat pumps work best in well insulated buildings, ⁵ so the NRCan checklist will be helpful in optimizing the insulation of these buildings and preparing them for heat pump installation. The Hantsport Fire Station is currently in the process of being demolished and rebuilt, so energy efficiency should be considered throughout the rebuild. The Berwick and District Volunteer Fire Station is a good example of energy efficient upgrades and renewable energy upgrades that can be considered.

⁵ Caroll, P., Chesser, M., & Lyons, P., 2020. Air Source Heat Pumps field studies: A systematic literature review. *Renewable and Sustainable Energy Reviews*, 134.

2.2 CONSIDER GREEN POWER PURCHASING

Cost/Funding	\$25,000 annual cost for a 50% offset Funding available through Low Carbon Communities
Dept. Responsible	All Departments and CAO
Timeline	Long term
Details	There's an expected GHG reduction of 315 tCO ₂ e, equating to 10.6% of the corporate electricity use. Taking this initiative can help to reduce the Municipality's GHG emissions more quickly than waiting for NSPI to green the grid. Providers own renewable energy production facilities and put a customers-desired amount of renewable energy onto the electrical grid. NSPI also noted a preferable method is a 'community solar garden' - a centrally located solar PV system that provides electricity to participating subscribers, while selling extra energy to the public energy grid. The solar garden being developed in Amherst, Nova Scotia is a project to follow and reference for this action. Investigate opportunities to purchase from independent green power providers such as Bullfrog Power and Natural Forces.

2.3 INVESTIGATE PARTNERSHIPS FOR RENEWABLE ENERGY PROVISIONS

Cost/Funding	Staff time
Dept. Responsible	Planning and Development and Public Works
Timeline	Short term
Details	Connections can help in building a stronger understanding of investing in renewables for Municipal energy, and partnerships can help to purchase, build, or invest in renewables. This action can be used as an opportunity to consider a long-term budget for renewable technology purchases by the Municipality. Stay current with new programs being developed in the province, such as the Nova Scotia Shared Solar Program. This action will help to establish other actions including 2.2.

Goal 3: Define a green fleet program

Switching to electric modes of transportation will allow the Municipality to lead by example and implement infrastructure that residents can use when they decide to switch to electric vehicles. Battery life for electric vehicles is expanding with every new model and charging stations can be strategically purchased and placed. Level 3 chargers are more expensive but allow for a much quicker charging sessions of one to two hours when compared to level 2 charging stations which can take anywhere from two to eight hours. Goal 3 is tightly linked to Goal 6 to be more electric vehicle and active transportation friendly.

3.1 INVESTIGATE 'BULK' PURCHASE OF EV'S AND EV CHARGING STATIONS	
Cost/Funding	Staff time and costs of implementation
Dept. Responsible	Procurement
Timeline	Short term
Details	A staff report will be done on the financial implications of purchasing bulk EV and EV charging stations to inform Council. A bulk purchase of EV charging stations would consist of at least 20 chargers, so purchases could be made in partnership with interested individuals from the community or other Municipalities. Partnering with landlords could be a way to allow residents who rent their homes to purchase EV's where they do not have autonomy over the

Goal 4: Invest in education for the community and staff

The community survey established that many residents are unsure about investments in solar energy projects and electric vehicles purchases, so greater education on these programs and their benefits would help residents understand their options and decide if they want to participate.

4.1 PARTNER WITH EFFICIENCY NS TO EDUCATE PUBLIC ON HOME RENOVATION PROGRAMS/ INCENTIVES AND THEIR BENIFITS	
Cost/Funding	Staff time and cost of printing/ promotional activities Potential funding with Low Carbon Communities
Dept. Responsible	Planning and Development and the MCCAP Committee
Timeline	Short term
Details	Programs exist from Efficiency NS and Clean Foundation that could help residents retrofit their homes for energy efficiency. Many community members are unaware, or do not know much about these programs, so the Municipality can partner with them to expand the information available, and how the upgrades can save them money long term. While education is important, the community also requires the necessary tools to carry out actions. PACE and other programs are the next step for involving residents, which can be found in action 5.6 of the Wishlist.

4.2 TRAIN WHRM STAFF ABOUT BEHAVIOURAL ENERGY EFFICIENCY AND EFFICIENCY NS PROGRAMS TO INTEGRATE INTO THEIR DAY-TO-DAY WORK AND INTERACTIONS WITH RESIDENTS

Cost/Funding	Staff time and training Potential funding with Low Carbon Communities
Dept. Responsible	Planning and Development and the MCCAP Committee
Timeline	Short term
Details	Use programs offered through Clean Foundation, Efficiency NS and NSPI. This training is especially important for the Planning and Development Department since they have many interactions with the public. Behavioural energy efficiency programs can be offered as first-time session to all employees, with a yearly refresher. Awareness can influence employee behavior in choosing

4.3 HIRE A DEDICATED GHG REDUCTION EMPLOYEE

Cost/Funding	Costs associated with the creation of a full-time position Funding offered though NRCan's numerous programs. More details are found in the funding
Dept. Responsible	CAO
Timeline	Short term
Details	Many actions rely on multi-year projects that would benefit from a "point person" to manage them and maintain consistency throughout their implementation. A dedicated GHG employee would be responsible for liaising with all Departments, community groups, provincial partners, and monitoring the status of projects. A budget to implement projects would be required for this employee, so local university students could be hired to do supporting research and offset the cost. This employee would also complete funding applications for the actions that require it.

⁶ Qui, H., Zhang, Y., Hou, G. & Wang, Z., 2018. The Integrative Effects of Leading by Examples and Follower Traits in Public Goods Game: A Multilevel Study. *Frontiers in Psychology*, 9: 1687.

Goal 5: Lead by example

Studies have shown that leading by example had positive effects on the cooperation of followers on both the group and individual level.⁶ Therefore, in order to reduce emissions and implement actions in the community sector, the Municipality must first demonstrate its commitment to actions in the corporate sector. It's not solely about how the Municipality acts, but also how the Municipality establishes tools and infrastructure that positively influence the activities the community participates in to reduce individual emissions.

5.1 INTEGRATE GHG REDUCTION STRATEGIES INTO HR POLICIES	
Cost/Funding	Staff time
Dept. Responsible	Managers, Department Heads and CAO
Timeline	Medium term
Details	Human Resources (HR) policies that allow for home working days or flex days where employees can work extra hours to achieve their bi-weekly salaried hours and take a day off at the end of the bi-weekly period. Flexible arrival/departure times can help employees carpool with each other or spouses. All Departments must agree on the strategies that will be put into HR policies, as well as define which employees may use these flexible hours.

5.2 INVESTIGATE OPTIMIZING BUSINESS/ WORK-ORDER TRAVEL	
Cost/Funding	Staff time
Dept. Responsible	Each Department
Timeline	Medium term
Details	Optimize work orders internally through one Manager who directs and organizes the work orders for maximum effectiveness. If there are two jobs required in Brooklyn in one week, those should be scheduled for the same day. To be completed as an HR or administrative policy.

5.3 ADOPT LAND USE POLICIES THAT MANDATE OR ENCOURAGE EFFICIENT/SUSTAINABLE GROWTH MODELS

Cost/Funding	Staff time
Dept. Responsible	Planning and Development
Timeline	Medium term
Details	Emphasis is on policies that drive efficient growth and development when reviewing the Municipal Planning Strategy and Land Use By-law. Such policies should seek to permit growth and development in such a way that does not necessitate the use of a car. This includes ensuring communities have sidewalks and bike lanes to facilitate active transportation, and paths to connect communities. The review should change policies that restrict development from single unit dwellings to two-unit dwellings in more urban areas to encourage greater density, reduce reliance on vehicles and make more efficient use of municipal services.

5.4 MAKE RENEWABLE ENERGY INVESTMENTS AND SUSTAINABILITY PRACTICES (CURRENT AND FUTURE) 'VISIBLE' AND KNOWN TO THE COMMUNITY

Cost/Funding	Staff time
Dept. Responsible	CAO and Communications
Timeline	Short term
Details	Use current channels including the community newsletter, social media pages and website to promote sustainable initiatives and green technology being taken up by the Municipality. Include information on climate change and how it impacts the Municipality to give residents a greater understanding of the need for these initiatives and keep them informed of the work being done. The use of these channels is an opportunity to enhance communication with residents and act as a starting point to bridge the knowledge gaps that were noted in the community survey. A dedicated space on the WHRM website would be beneficial to have as a common area where all updates and information can be easily housed and accessed by residents.

5.5 EXPLORE OPTIONS TO INCLUDE ANTICIPATED GHG EMISSIONS IN STAFF REPORTS FOR COUNCIL AND COMMITTEES

Cost/Funding	Staff time
Dept. Responsible	All Departments
Timeline	Short term
Details	The inclusion of "Greenhouse Gas Emissions Implications" as a subheading in the pre-formatted staff reports would compel staff to consider the emissions associated with the proposed project and allow Council and other Committee members to make decisions and recommendations based on the impact on the Municipality's GHG reduction goal. This can help avoid increases in GHG emissions and allow for tracking on new projects as the Municipality moves onto PCP Milestones 4 and 5. The GHG employee can help to calculate emissions for all Departments, as well as monitor emissions for new buildings and retrofits. GHG emissions should also be considered as part of any RFP process, such as new builds, retrofits, and new equipment purchases.

Goal 6: Be more electric vehicle and active transportation friendly

For rural municipalities in particular, residents are heavily reliant on vehicle transportation due to the development patterns of the area and communities within it. Rural municipalities generally have larger lot sizes with services being located outside of manageable walking or cycling distances. Charging stations can be strategically placed by the type of charger. Level 2 chargers take 2-8 hours to charge and would ideally go in areas where cars are sitting for a few hours, such as a community center or places of work. Level 3 chargers are able to charge much more quickly and are best placed at gas stations, fast food restaurants and other short-term stops. Visibility is important to get residents thinking about electric vehicles. Hosting EV charging stations can also entice visitors from outside of the Municipality to visit.

A challenge of this goal is that Municipalities are unable to act as a utility and therefore charging for electricity used by EV charging stations becomes tricky. While this report outlines some baseline suggestions, it is recommended that legal advice be sought to identify exactly how a Municipality can legally charge for electricity in this case. The session fee for users would have to be charged on a per hour basis, and from there a rate would have to be determined in order to cover the per hour cost. NSPI will have to be consulted to go over operation costs of the EV charging stations. NSPI charges \$15 an hour for a level 3 chargers and \$1.50 per hour for a level 2 charger. Ideally, these rates would be the same for WHRM once operation costs are confirmed. There is a balance that needs to be made in order to cover costs of electricity use, without earning a profit from the EV charging stations. Halifax Regional Municipality is in the process of determining how it can charge for electricity from EV charging stations, so it will be a valuable resource as it moves forward through the process.

6.1 EXPLORE POTENTIAL PARTNERSHIPS FOR EV CHARGING STATIONS	
Cost/Funding	Staff time (research) and \$2,500-\$3,500 per charging station
Dept. Responsible	Planning and Development and Community Development
Timeline	Medium term
Details	Employers and commercial vendors in WHRM may be interested in partnering with the Municipality to host EV charging stations on their properties for employees and customers. Goal is to implement two (2) new stations in WHRM over the next 5 years. Potential partners include Hants Community Hospital, Tim Hortons, McDonald's, Sobeys, and Atlantic Superstore. Visibility of EV charging stations is important to get residents thinking about their next car purchase and can entice visitors with electric vehicles to visit. Consider a partnership with NSPI.

6.2 EXPLORE FUNDING FOR EV CHARGING STATIONS ON MUNICIPAL PROPERTY

Cost/Funding	Staff time (research)
Dept. Responsible	Planning and Development and Community Development
Timeline	Short term
Details	This gives the Municipality an opportunity to take on a leadership role in providing EV charging stations to the public on Municipally owned properties in central and frequently used locations. The goal is to acquire enough funding to introduce two (2) EV charging stations in WHRM.

6.3 EXPLORE OPPORTUNITIES TO CREATE A TRANSPORTATION HUB

Cost/Funding	Staff time and cost of infrastructure and land acquisition if not already Municipally owned Funding available through NS Transit Research Incentive Program, Connect2Program and potentially through FCM's Green Municipal Fund
Dept. Responsible	Planning and Development and Community Development
Timeline	Medium term
Details	A transportation hub can encourage people in WHRM to transition away from personal vehicles. A transportation hub requires identifying a central location which is available for public parking (such as a park and ride lot), accommodating other modes of transportation at this point, including a transit stop, bicycle parking and quick repair station, carpooling area, EV charging stations, and placing it in a walkable area. If WHRM decides to create a bus route throughout the Municipality, research into an electric bus should be conducted and seriously considered in

6.4 INTEGRATE ACTIVE TRANSPORTATION CONSIDERATIONS INTO LAND USE PLANNING DECISIONS

Cost/Funding	Staff time
Dept. Responsible	Planning and Development and Community Development
Timeline	Short term
Details	Land-use planning determines the type of transportation people need to use. Planning staff should incorporate active transportation related policies into the planning documents. For new, large developments, discussions should include opportunities to promote active transportation in the planned community or building where relevant. Ensure planning documents reflect active transportation opportunities through closer communities, connecting paths, and sidewalks and bike lanes.

Goal 7: Make it easier to buy from local vendors and eat local food

One of the many charms of rural living is the access to fresh, local food. Food production and transportation cause a lot of GHG emissions throughout the lifecycle process, so local food is extremely beneficial when it comes to cutting back on emissions from both transportation and mass production.

7.1 REVIEW AND AMEND POLICIES TO PROMOTE SMALL-SCALE AGRICULTURE	
Cost/Funding	Staff time
Dept. Responsible	Planning and Development
Timeline	Short term
Details	It's been noted that certain policies, whether advertently or inadvertently work to make small-scale agriculture more difficult. During the Municipal Planning Strategy and Land Use By-law review the Municipality should review policy documents and find areas to promote small-scale or household agriculture within the three agricultural zones. The documents should be scanned for policies that prohibit small-scale agriculture and a literature review of local agriculture policies for rural/ small-scale agriculture should be undertaken, as well as consultation with farmers. Ensure policies promote the sale of local food (i.e., farmers markets) on commercially zoned properties and in other zones, where appropriate, to allow action 7.2.

7.2 EXPLORE OPPORTUNITIES TO MAKE MUNICIPALLY OWNED FACILITIES AVAILABLE TO THE COMMUNITY FOR BUYING/ SELLING LOCAL FOOD AND GOODS	
Cost/Funding	Staff time
Dept. Responsible	Community Development and Public Works
Timeline	Long term
Details	The goal is to create more consistent programming space for local food producers. This entails the Municipality offering space in existing buildings to groups at no rental cost in order to host farmers' markets under any weather conditions.

Wishlist Actions

Actions in the Wishlist expand upon the actions and goals listed above. These Wishlist actions are derived mostly from the dynamic scenario, leading to large cost and large emissions reduction. These initiatives are ones that the Municipality should seek to achieve in addition to the above action items only by acquiring funding for them. While not necessary to reach the 45% goal, they are extremely beneficial in the long term for community access to sustainable and green technology options, as well as future cost savings for the Municipality as the 6 to 1 rule implies. The 6 to 1 rule means that the cost to invest in these mitigation and adaptation measures costs six (6) times less than fixing the damage to infrastructure that is later caused by climate change.¹

1.4 DETAILED AUDITS FOR THE WATER AND WASTEWATER TREATMENT PLANTS	
Cost/Funding	\$12,000 per audit Funding may be available through Low Carbon Communities
Dept. Responsible	Public Works
Timeline	Long term
Details	Detailed audits should be completed for the water and wastewater treatment facilities as they have some of the highest rates of electricity consumption amongst municipal assets. The following buildings should be prioritized, in order of greatest energy consumption: Falmouth Sewer Plant (48 Falmouth Connector Rd.), Windsor wastewater pumping station (3 Lagoon Dr.), Windsor Water Treatment (786 Windsor Back Rd.), Falmouth Water Plant (242 Eldridge Rd.), Hantsport Water Treatment (2160 Bishopville Rd.). Staff noted that the biggest source of energy consumption of these facilities stems from heating water, especially during the colder months. Insulation for the pipes that carry the water would be beneficial to preserve the heat.

1.5 RECOMMISSIONING OF THE BROOKLYN FIRE STATION AND CIVIC CENTER	
Cost/Funding	\$25,000
Dept. Responsible	Public Works
Timeline	Long term
Details	Assessment should determine whether the building meets the LEED standard it was built to. This in-depth audit is the first step in recommissioning which will optimize the performance and operation of the building's system, resulting in a reduction of 24.45 tCO ₂ e. Other buildings that are Wishlist items for a detailed audit are Municipal building (76 Morrison Dr.), Hants County Courthouse (240 King St.), and the Public Works Shed (19 Chittick Ave).

2.4 INVESTIGATE RENEWABLE ENERGY OPPORTUNITIES – SOLAR PV FOR THE WATER AND WASTEWATER TREATMENT PLANTS

Cost/Funding	\$557,700 for 650 panels and 13 two-axis trackers (Scalable solar system is \$900-\$1,100 per solar panel based on 2019 numbers) Funding may be available through Low Carbon Communities
Dept. Responsible	Public Works
Timeline	Medium term
Details	Expected emissions reduction is 244 tCO ₂ e with a ground mounted solar PV system on the Falmouth Sewer Plant (48 Falmouth Connector), which equates to a 13.8% reduction in the water and wastewater sector. Small scale systems are typically grid connected without battery storage, with net metering available to balance the hourly differences between facility electricity demand and system generation. The water and wastewater treatment plants are the greatest source of emissions in the corporate sector, so renewable energy can help offset the energy

2.5 UPDATE THE ASSET MANAGEMENT PLAN TO INCLUDE SOLAR

Cost/Funding	\$1,000 per solar panel Funding may be available through Low Carbon Communities
Dept. Responsible	Public Works
Timeline	Long term
Details	Solar streetlights, signs and crosswalk lights should replace old infrastructure once it needs replacing. Investigations should be made into a budget for this process, as well as funding that

3.2 EXPLORE A CORPORATE CAR SHARING PROGRAM

Cost/Funding	\$30,000-\$70,000
Dept. Responsible	Public Works and Procurement
Timeline	Medium term
Details	Inside work hours the vehicles are used as the municipal fleet. Outside business hours, cars are made available to a public car sharing program. Staff need to explore the feasibility of this project in terms of liability and insurance. Consider Clean Foundation's 'Next Ride' program to offer a model for insurance. Goal is a staff report on the implications of implementing a corporate car sharing program to inform Council.

3.3 CREATE A 'FLEET MANAGEMENT PROGRAM' THAT INTRODUCES EV'S OVER A MULTI-YEAR TIMELINE

Cost/Funding	Basic vehicles for staff travel (not related to work-orders) cost around \$30,000 (2019 estimates) Funding may be available through FCM's Green Municipal Fund
Dept. Responsible	Procurement
Timeline	Long term
Details	Beneficial in setting an example for the community as well as reducing refueling costs since electricity is cheaper than other fuel. Goals are to establish a vehicle replacement schedule and can model infrastructure needed to support the operation of the vehicles. Clean Foundation has a 'Next Ride' program which can help with literacy about EV's. Using these vehicles for a car share program can assist residents with minimal transportation options and allow the Municipality to use the cars for non-work order related business travel (i.e., staff that have to attend meetings during the work day but are not responding to a service request from residents). This could start by renting to other businesses and as the fleet grows, open it to the public.

3.4 CONSIDER INTRODUCING CARPOOL AND BICYCLE INCENTIVES FOR WORK TRAVEL

Cost/Funding	Capital costs associated with reimbursement rate for work
Dept. Responsible	CAO
Timeline	Long term
Details	The Municipality would play a leading role to promote carpooling. Many lots around the Municipality have the potential to function as carpool lots. Municipal staff could receive incentives to carpool, as well as the use of active transportation for work-related travel. Incentives could include flexible arrival times to work or increased re-imbusement rates for carpooling for a work trip. A similar incentive could be made for active modes of transportation

5.4 MAKE RENEWABLE ENERGY INVESTMENTS AND SUSTAINABILITY PRACTICES (CURRENT AND FUTURE) 'VISIBLE' AND KNOWN TO THE COMMUNITY

Cost/Funding	Capital costs of promotional materials and costs of hiring a marketing consultant through an RFP process
Dept. Responsible	Planning and Development and Community Development
Timeline	Long term
Details	As an extension from the action plan item of the same name, the dynamic portion of this action includes a higher level of marketing and visibility of the actions. Celebrating the efforts associated with the local action plan is important for introducing the goals to the community as well as garnering and maintaining buy-in. This is especially important when the Municipality makes a monetary investment where the success depends on positive public perception (EV's, PACE program, etc.). Includes social media and newsletters, as well as wayfinding and signage around buildings where renewable energy and sustainability practices are featured.

5.6 EXPLORE OPTIONS ON PACE PROGRAMMING

Cost/Funding	Dependent on partnership and the number of homeowners the Municipality wants to finance at once. Funding can be found through Efficiency NS SolarHomes Program, NS PACE, and FCM's PACE
Dept. Responsible	Planning and Development
Timeline	Long term
Details	Explore partnerships with Clean Foundation or Efficiency NS to build a Property Assessed Clean Energy (PACE) financing model. The financing is structured around municipal funding model where a pre-determined amount of money is allocated each year and financing is available on a first- come first-served basis. Province provides Municipality with start-up funding for this program and the Municipality commits to funding the program during the following years. This action had a lot of interest on the community survey and should be highly prioritized when moving forward with Wishlist actions, especially to reduce community emissions.

5.7 PROMOTE DESIRED ACTIONS, POLICIES, AND INCENTIVES TO THE PROVINCIAL GOVERNMENT

Cost/Funding	No capital cost
Dept. Responsible	All Department Managers and CAO
Timeline	Long term
Details	Energy consumption is one of the major contributors to overall GHG emissions in the Municipality. This is due to the use of the Provincial power grid which still uses a large percentage of coal-powered energy when compared to other provincial providers. Advocating for a faster transition to renewables can be accomplished through pre-existing channels such as inviting NSPI representatives to MCCAP meetings on energy as well as relevant workshops hosted by the Municipality. Promotions should include the removal of red tape around sustainable forms of agriculture. Any concerns brought up by individuals in the agricultural sector as part of action 7.1 should be addressed here if the issues apply to Provincial

5.8 EXPLORE OPPORTUNITIES FOR THE MUNICIPALITY TO JOIN THE CIRCULAR ECONOMY

Cost/Funding	Staff time
Dept. Responsible	The newly hired GHG reduction employee from Action 4.3
Timeline	Long term
Details	Circular agriculture is one example of how the circular economy can flourish in West Hants. Using waste products as fertilizer will take more items out of the waste stream while allowing for more natural solutions and less dependence on chemical fertilizers, which contributes to nutrient runoff. This saves emissions from animal waste product and diverts composting waste from the waste stream. Similar input/output benefits should be considered with all industries in WHRM.

7.3 CREATE FOOD EDUCATION PROGRAMS IN PARTNERSHIP WITH COMMUNITY AND SCHOOLS, INCLUDING WASTE REDUCTION

Cost/Funding	Staff time and capital costs to run the program, including travel for staff and print/promotional
Dept. Responsible	Community Development
Timeline	Long term
Details	<p>Research from Ontario has shown a strong link between food education programs in school and long-term benefits in food literacy and overall health and wellbeing. The program can and should be developed in partnership with community organizations and individuals who are able to provide resources on the topic and/or direct knowledge of food systems in the WHRM context. Examples include a local representative of the NS Federation of Agriculture, a non-local charity with food education and provision programs, public health, the school board, or a non-profit organization such as the Ecology Action Centre. There is also Province-wide programming to provide food education and, in partnership with knowledgeable people from the Municipality, this could be tailored to WHRM. A key feature is educating school-aged children on the importance of eating local foods and how to prepare these foods. A good example is the program at the Dr. Arthur Hines District School.</p>

7.4 LOCAL PROCUREMENT POLICIES

Cost/Funding	Staff time for policy review
Dept. Responsible	All Departments
Timeline	Long term
Details	<p>Municipality has existing local procurement policies for projects and items that go to tender, but these are limited since many times tendering is not required. This action would create a Policy of Council that would mandate staff to consider and prioritize local food or vendors who work with local food above those who are not from WHRM, or Nova Scotia more broadly. Additionally,</p>

Funding

Direct Funding Opportunities

Numerous funding opportunities exist for many of the actions described in the plan. Application deadlines differ for each funding opportunity, and one funding channel can apply to multiple action items. Funding offered for both planned and Wishlist actions can be found in Table 3. However, since Action 4.3 is contingent on the acquisition of funding for the position, these potential funding streams are highlighted below:

Funding through NRCAN (full list found [here](#)):

- Eco Canada's Science [Horizons Youth Internship](#) - Covers up to 80% of wages to hire jr. professionals for the position, with a skill focus in STEM
- Eco Canada's [Science and Technology Internship \(S&T\)](#) – Covers up to 80% of wages for young professionals, with a skill focus in Natural Resources
- [Clean Foundation Green Jobs](#) – Clean Foundation will subsidize 50% of each intern's salary for up to 12 months
- [Biotalent Canada](#) – Covers up to 80% of a new hire's salary.

Funding through the Government of Nova Scotia:

- [Community Works Program](#) – funds up to 50% of eligible costs to a maximum of \$25,000 for each employment project.

Table 3 Funding options available for action plan and Wishlist items

Table 3 Funding options available for action plan and Wishlist items

Funding	Description	Action
Nova Scotia Transit Research Incentive Program (TRIP)	Funding is available for one project per year for transit projects generating new and improved public transit services in rural and serviced urban areas. 2021/2022 funding has closed but this stream should be checked on for when it reopens	Action Plan: 6.3 Explore opportunities to create a transportation hub Wishlist:
Canada Community-Building Fund (formerly Gas Tax Fund) - No application necessary; allocate part of the yearly gas tax funding to the cost of upgrades associated with the internal building conditions survey	For energy efficiency upgrades or active transportation projects. Note that projects must be capital related to qualify for this fund – while replacing lights with LED's is likely considered maintenance, changing over to sensor lights at the same time may upgrade the task to a capital related enhancement	Action Plan: 1.1 Perform an internal building conditions survey (for the cost of associated upgrades)
FCM Buildings Funding - Community building recommissioning grant - Capital Project: GHG impact retrofit	Supports local governments and not-for-profit organizations in retrofitting public buildings to improve energy performance, lower operating and maintenance costs, and transition to cleaner energy solutions over time. Both includes firehalls, public works, and administrative buildings only if they're done in combination with other applicable community buildings listed in the application (a portfolio). The community building recommissioning grant offers a maximum of \$55,000 to cover up to 60% of eligible costs, while the GHG impact retrofit offers a combined loan and grant for up to 80% of eligible project costs while achieving a minimum 30% GHG emissions reduction.	Actions: 1.3 Office building location review 2.1 Fuel switching – heat pumps Wishlist: 1.5 Recommissioning of Brooklyn fire station and civic center (including additional Wishlist buildings stated in the action)
Nova Scotia PACE https://novascotiapace.ca/municipalities/	NS Department of Energy and Mines offers \$15,000 in start up costs, whether joining an existing program or creating one specific to the Municipality. Nova Scotia PACE offers existing PACE programs to join, and FCM offers funding to create a new one.	Action Plan: 5.6 Explore options on PACE programming
FCM's PACE style Programming - Study: Design a local home energy upgrade financing program - Pilot Project: Local home energy upgrade financing program	The Study offers grants of up to \$175,000 to cover up to 80% of eligible costs. Program design studies are a prerequisite to apply for capital project funding through FCM, and the study would lay the groundwork or a home-energy upgrade financing program. The pilot project offers grants of up to \$500,000 to cover up to 50% of eligible costs. It supports the implementation of a small-scale version of a local financing program for home energy upgrades.	Action Plan: 5.6 Explore options for PACE programming
Efficiency NS SolarHomes Program	Efficiency NS offers rebates on approved solar PV systems up to 10kW in size as an incentive for homeowners.	Action Plan: 5.6 Explore options for PACE programming

<p>FCM's Green Municipal Fund - Capital Project and/ or Pilot Project Reduce fossil fuel use in fleets</p>	<p>Pilot projects evaluate a small-scale version of a project or a full-scale, replicable version. The goal of both projects is to reduce or avoid fossil fuel use in vehicles that deliver municipal services.</p>	<p>Action Plan: 3.1 Investigate 'bulk' purchase of EV's and EV charging stations (pilot project for implementation) 6.2 Explore funding for EV charging stations on Municipal property 6.1 Explore potential partnership for EV charging stations 6.3 Explore opportunities to create a transportation hub Wishlist: 3.3 Create a fleet management program that introduces EV's over a multi-year timeline (capital project)</p>
<p>Connect2Program: https://novascotia.ca/connect2/</p>	<p>For projects that will improve connectivity between communities. Project categories include Active Transportation Infrastructure and Design, Shared Mobility & Bicycle Fleets and Capacity building and Community Engagement. Deadline for applications is September 22, 2021. Projects must be completed by March 18, 2022.</p>	<p>Action Plan: 4.2 Train WHRM staff about energy efficiency and Efficiency NS Programs to integrate into their day-to-day work and interactions with residents. 5.4 Make renewable energy investments and sustainability practices (current and future) 'visible' and known to the community. 6.3 Explore opportunities to create a transportation hub Wishlist: 3.2 Explore a corporate carsharing program</p>
<p>Low Carbon Communities: https://novascotia.ca/low-carbon-communities/</p>	<p>Grants of up to \$75,000 are available for 'advance buildings', including energy audits and deep energy retrofits. \$75,000 is also available for 'clean electricity & energy transformation' including plans and feasibility studies for solar and solar gardens. Under 'capacity building and community engagement' \$50,000 is available for municipal staff training. Education, and public engagement activities. Applications are done on a yearly basis.</p>	<p>Action Plan: 2.2 Consider green power purchasing 4.1 Partner with efficiency NS to educate public on home renovation programs/ incentives, overall reduced cost of living, etc. 4.2 Train WHRM staff about efficiency NS programs to integrate into their day-to-day work and interactions with citizens Wishlist: 1.4 Detailed energy audits for the water and wastewater plants 1.5 Recommissioning of the Brooklyn fire station and civic center 2.4 Investigate renewable energy opportunities – solar PV for the water and wastewater treatment plants 2.5 Update the asset management plan to include solar outdoor lighting 5.4 Make renewable energy investments and sustainability practices (current and future) 'visible' and known to the community</p>

Indirect Funding Opportunities

Some funding can be offered to residents through education and other action items listed in the plan. Efficiency Nova Scotia Programs can be incorporated into education programs for the community to inform them of funding they can apply for. These include the [Home Energy Assessment](#), [New Home Construction](#), [Home Warming](#), [Appliance Retirement](#), [Green Heat](#), and [Product Installation](#). Descriptions of each can be found in the WSP background study, as well as the Efficiency NS website.

Next Steps

As per the progression of the PCP Program, Milestone 4 entails implementation of the local action plan, and Milestone 5 requires monitoring of the actions. Implementation will start by working towards actions with a short-term timeline and applying for funding for the actions that need it. Priority however should lie with. Hiring a dedicated GHG employee (as outlined in Action 4.3) would assist in both Milestone 4 and 5 so that the responsibility of implementation and monitoring can be championed by the new position.

APPENDIX A Survey comments

Q12. Thank you for taking this survey! Do you have any comments?

1. Save our river's and oceans for our next generations, we need all our natural resources protected against greed for the few. We all live in this enriched region along the Minas Basin with fingers connected to the rivers.

2. My concern with the push on tech based energy solutions is the cost to the environment digging up the rare earth metals required for the tech. We already have a tech garbage issue and it is highly toxic as well. So while we win with carbon not so much with ongoing killing of the earth and it's waters

3. Encouraging rainwater collection is also a great initiative!

4. Stop adding ways to make it harder for the poor. Of course we are going to buy things at Sobeys for \$2 when the farm markets charge 3 to 4 times as much. We don't have money to spare!

5. Planning strategy must reflect a decrease in dependence on automobiles. Subdivisions being built with no sidewalks or connectivity to surrounding areas only encourage more automobile use. Design our community to human scale. Sprawling subdivisions reflect 1950's thinking and only leave future residents with cumbersome infrastructure deficits.

6. While our climate may be changing and we should look after our world, I believe it will happen no matter what we do. Many of the incentives to be more environmentally friendly, are out of the price range for the average citizen. Until alternate, cheap power sources can be found/produced it will remain with the wealthier citizens.

7. Would love to see a bigger and more consistent (inside maybe) farmer's market with a stronger emphasis on food rather than crafts and soap etc. Would love the solar "city" idea to come here and provide more green ways to heat my home...

8. Concerned with the talk of free tidal flow at the Windsor Causeway and how that could impact low lying areas. Concerned with flooding, 100 Year Storm, rising sea levels etc. I do not want free tidal flow, but do want to see better fish passage if possible, and absolutely want to see fresh water continue in Lake Pisiquid.

9. I think climate change is a political football. It's a leftist agenda and the initiatives are a ploy. Al Gore with private jets and mansions. David Suzuki with multiple homes. Too many agendas in too many directions

10. Some of the survey questions do not apply to my current situation. I rent an apartment (I have no say RE heat pumps, solar energy) and I do not have a vehicle and I do not plan on purchasing a vehicle. If I did own my home I would go completely green if affordable options were readily available. I do really wish we had public transportation.

11. Shopping local is a great idea but when the products are often twice as expensive as Ontario products (some would still consider this local) it's a hard choice to make.

12. Please keep going on this important work!!

13. Keep up the great work on climate initiatives!!

14. Just look at the rising tides and how far the water level is to the top of the dykes will tell you how important climate change is

15. I couldn't answer question 10 because I go to farmers markets and grocery stores for different reasons. Thanks

16. It would be nice to have public transit here.

17. Please fill up the lake so it's pretty here again

18. You ask about the environment but are specifically not asking about the Avon River. Shame on council for not thinking forward for many generations to come.

19. I am a senior person, living in a rental unit, therefore, some of this does not apply to me.

20. better walking connections to the mall.

21. I'm light of climate change it is very important for our community to protect the freshwater section of the Avon river. The farmland protected by the current aboiteau structure protects very fertile soil that can help our area achieve much greater food sovereignty. If salt water were allowed in that land could be lost to valuable horticulture crops for years.

22. Long term planning and development processes need to reflect the changing reality. Development that provides advantages to single occupant vehicle trips at the expense of other modes is not wise or sustainable. The fact that development is currently occurring where sidewalks and pedestrian connections are not a condition of the development permit is short sighted.

23. Berwick and Mahone bay are already ahead of our community... and using our backyard to profit. AS well as the dams by NSP. It would foolish not to use our location to benefit like other small communities. Why has council not supported this at the forefront before?

24. # 10 &11 is a question of cost.

25. Public transit routes from towns to towns would be useful for many to get to their places of work without requiring the expense of a car.

26. Your questions are interestingly worded. I can consider or have considered doing things, however it does not necessarily mean I'm going to do it nor address why I have not actually taking that action.
Will there be a follow-up survey relating to actions the municipality could take related to climate change preparations?

27. This is very important! We need more solar, wind and EV adoption. We need more bike paths and active transportation options.

28. West Hants is behind others in supporting green lifestyle. There is an opportunity for EV chargers and a solar garden (although what's the point if we don't own our own utility?) Do we sell it back to NSPI?

APPENDIX B NRCan Checklist

The full NRCan checklist can be found [here](#) with the following images used from the PDF document titled Energy Savings Toolbox – An Energy Audit Manual and Tool.

Date: <u>31 May 2002</u> Auditor: <u>SD</u> Comments:		Insulation Good	Insulation Average	Insulation Poor	Flanges Insulated	No Leaks	Some Leaks	Many Leaks	Automatic Controls	Standard Operating Procedure	Steam Meter	Fuel Meter	Make-up Water Meter	Preventive Maintenance	Fix as Required	Energy Recovery	Economizer Controls	Total Points
		No.	Location/Points	2	1	0	2	2	1	0	1	1	1	1	1	0	3	2
	Maximum Score	2			2	2			1	1	1	1	1	1		3	2	17
1	Main Boiler Room		1				1		1		1	1		1		3		9
2	West Plant Boiler		1					0						1				2
Total Points for Section																		11
Rating for Boiler Plant Systems = $\left(\frac{100 \times \text{Total Points}}{\text{Number of Items} \times \text{Maximum Score}} \right) = \left(\frac{100 \times 11}{2 \times 17} \right)$																		32%

Range of Score	Action Required
0–20	Immediate corrective action required
20–40	Urgent corrective action required
40–60	Corrective action required
60–80	Evaluation for potential improvement required
80–100	No corrective action required